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"ASBESTOS"

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CONTENTS

	Page
The Origin of Asbestos — By M. F. Smith	2
Industrial Changes — By F. R. Cozzens	8
An All Asbestos Corn Crib	12
Asbestos Coatings	13
National Defense and Asbestos	16
Asbestos in Core Sand	18
Hot and High — An Installation Story	20
Market Conditions	22
Contractors and Distributors Page	
Build Now	26
Building	27
News of the Industry	28
L. M. Cassidy and L. C. Hart	30
Visualizing Your New Roof	31
Sta-Dry Header	32
Patents	34
This and That	35
Production Statistics	36
Imports and Exports	37
Automobile Production	39
Current Range of Price	40
Asbestos Stock Quotations	40

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THE ORIGIN OF ASBESTOS

By M. F. Smith, Research Chemist
The Philip Carey Manufacturing Co.

Editor's Note: Not for some time have we discussed in our pages the always interesting and debatable question of the origin of asbestos. We feel certain therefore that our readers will find this article by Mr. Smith of very great interest, as well as a second one, which will probably be published in our August number, and will discuss the various types of asbestos, its resistance to heat and other of its properties.

—:—

Asbestos has been the subject of popular interest from the earliest times. Its unusual properties have made it a tool of the magician, fakir, pagan priestess, and wit, as well as useful in the more serious business of the undertaker. During this early period a small amount of practical information was obtained and recorded in scattered technical records, while a large amount of romantic misinformation was gathered and spread to the non-technical investigator, often resulting in amusing misconceptions of what asbestos is and can do.

ORIGIN.

Asbestos, because of its fibrous structure and appearance, has often erroneously been considered of fossil origin, some students postulating that a prehistoric type of cotton fibre had collected under favorable conditions and then, under the influence of temperature, pressure and mineralizing solutions, had ossified in a manner similar to the petrified forests in the western part of the United States. It was thought that the trees of these original forests became submerged in waters containing an appreciable amount of soluble silica (dissolved sand) which was then deposited in the wood cells as the cells decayed. Silica thus replaced the cellulose and other organic matter of the wood cell structure, thus preserving the shape and size of these cells in such minute detail that a wood expert can tell what type tree originally grew in this forest. The petrified wood, examined under the microscope, still shows the original wood cells.

Chemical and mineralogical studies, however, clearly

show that asbestos fibre is not of vegetable or animal origin, but entirely of mineral origin. Taking as an example the chrysotile asbestos mined in Canada, the observed facts lead to the following explanation of its formation. Most authorities hold this viewpoint in general, altho several disagree on some of the minor details.

In the greenstone region of Canada, covering hundreds of square miles, the present surface rock was at one time thousands of feet below its present elevation, and under very great pressure due to the weight of the overlying rock and soil. This rock is a variety of olivine called peridotite and is composed of iron, magnesia and silica. In certain extensive areas this rock was acted on by hot ground waters, under high pressure, and carrying dissolved salts and carbon dioxide. The pressure is easily understood when it is realized that the rock was very far below the earth's surface, and the high temperature is explained by the fact that the temperature of the earth increases about 1°F. for every fifty feet of depth. From depth alone, this would give a temperature increase of at least 50°F. for every 1000 feet, not to mention the hot intrusive rocks also present. These ground waters gradually changed the original rock from the iron-containing peridotite to the magnesia-silica-water ($3MgO \cdot 2SiO_2 \cdot 2H_2O$) mineral, serpentine. During the alteration the volume of the rock increased causing innumerable cracks, small and large. These cracks were filled with the hot ground waters, chiefly derived from the slow infiltration of rain or surface waters. This underground water circulated thru the cracks in the rock, descending slowly thru the smaller openings in the rocks and ascending thru the larger openings and cracks. This water at high temperature and containing carbon dioxide under pressure is a very good rock solvent. The water rising in the larger cracks loses pressure and slowly cools, losing some of its solvent power and throwing out a small amount of the dissolved rock. This material deposits on the sides of the crack in the rock thru which the water is flowing, and if suitable mineralizers are present, such as dissolved salts and carbon dioxide, tends to form regular crystal shapes, depositing the molecules in a regular rather than a haphazard manner. Rock salt gives cubes;

diamond forms in octahedrons; graphite in six sided plates, gold in octahedrons or cubes. Asbestos forms in easily separable, closely packed filaments, which when teased apart give the workable form in which asbestos is marketed and used.

It may be difficult to understand that rock can be flexible since rock in the mass usually is hard and shatterable, while most of our flexible, fibrous materials are derived from plants and animals,—for examples, cotton and wool. Ordinarily, anyone examining fibrous asbestos for the first time would immediately associate the fine, flexible, mineral asbestos fibres with similarly appearing natural materials and would attempt to interpret his impressions in terms of what he already knew. Is it any wonder that the ancients believed asbestos to be fossilized vegetable or animal fibres? The ancients could not easily grasp the fact that rock could be easily torn apart into fibres and those fibres bent without splintering.

The large amount of rock originally lying above the asbestos has been removed by weathering and glaciation. About 20,000 to 30,000 years ago and approximately 500,000 to 1,000,000 years before that the area now within the boundaries of Canada and the United States was covered by thick ice sheets conservatively one to two miles deep, now referred to as the Great Glaciers. These ice sheets ground off much of Canadian rock, exposing the present asbestos deposits, and also removed the tops of the Adirondack Mountains, which, except for the glaciers, would be thousands of feet higher than at present, and extended as far south as the Ohio River. The Philip Carey plant at Lockland, Ohio, is built on a deposit of over 150 feet of this Canadian and New York rock which was rolled and ground down to gravel and sand and was carried into Ohio and dumped when the ice melted.

PICROLITE.

The crystallization of the Canadian serpentine rock did not in all cases give crystals having the properties of asbestos. There are large masses having exactly the same chemical composition as the asbestos fibre ($3MgO \cdot 2SiO_2 \cdot 2H_2O$), but probably due to unfavorable conditions or unsuitable mineralizers, formed instead of the flexible, soft fibre a

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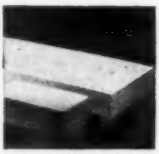

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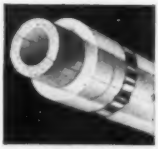

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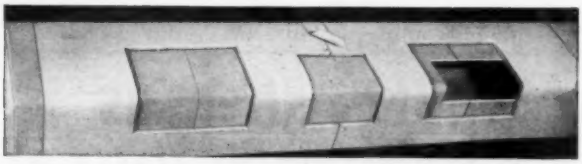

Cut-out view of CAREYDUCT—assembled sections showing staggered joint construction and taped outer jacket. Smooth appearance.

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very brittle, glass-like fibre called by the geologist "picrolite"; by the workmen whose language is more picturesque and forceful and perhaps also more descriptive, it is commonly referred to as "bastard asbestos".

PRECIOUS CHRYSOTILE.

In addition to silky asbestos fibre and harsh picrolite fibre, the same chemical elements in exactly the same proportions sometimes crystallized out not as fibres, but as transparent crystals, of a beautiful green, glass-clear appearance. This material is known as "precious chrysotile" and is sometimes used as a gem stone.

DIFFERENCE IN OPINION.

The theory for the formation of asbestos fibre as given in the foregoing is held by many experts, but may be and is contested in some of its minor details by others, based on slightly different conditions present where they made their observations. In most cases the difference of opinion relates to such details as to how the waters were heated, and what the mineralizers were rather than to the whole of the theory. What has been said above about Canadian asbestos fibre formation holds also for the Vermont chrysotile fibre, Arizona, Russian, Cyprus, and South African chrysotile fibre, as well as for some of the other non-chrysotile types of fibre.

—:—

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INDUSTRIAL CHANGES—

Asbestos Helps to Meet Them

By F. R. Cozzens

The industrialist who follows business trends closely can scarcely help being amazed at the changes which occur in his particular field in the course of a year.

Despite unstable conditions progressive research, invention, and discovery go on, creating new products, and altering former methods of production. Raw materials necessary to such production must have the adaptability to meet the ever-changing need. Asbestos is one such material that stands the test. We find it ever to the front in a wide variety of combinations. Due to such diversity, many devices in the experimental stage less than twelve months ago are today essential factors in industrial progress.

IN THE EXPLOSIVE FIELD.

A very recent contribution that serves the layman as well as the engineer, is an asbestos shock-absorber for explosives. There has long been a need for such a buffer in blasting operations due to the fact that in the construction of sub-surface foundations, abutments, reservoirs, etc., the formation immediately below the excavation must be left intact. Since blasting is a necessary procedure, the builder must act with the knowledge that a charge of explosives placed in the earth, exerts at the moment of firing, equal force in all directions. The base of the hole, or the formations directly under the blast are crumbled in most cases by this force unless in some way the action is prevented. This is now being done by drilling a pocket in the bottom of each shot-hole, and filling and tamping the pocket with short-fibre asbestos. Amount of fibre required is from six ounces for ordinary blasting, to several hundred pounds in making reservoirs in oil and gas wells. The basic principle, however, is the same. A charge of explosives placed upon this buffer and fired, exerts normal force against the sides of the hole, but the downward "kick" is softened by the resilient fibre so

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that under-breakage is eliminated. A very special advantage is that the asbestos fibre does not "burn up" at the critical moment in the intense heat generated at detonation.

Other recent contributions in the commercial explosives field include an asbestos-latex compound for sealing electric blasting caps; an asbestos-rubber insulation for contact wiring; and strainers of fine-combed asbestos yarn, used in the filtration of sulphuric and nitro-hydrocholoric acids.

IN THE ROPE AND CABLE INDUSTRY.

Serving a wide variety of industrial uses is a new, specially built core for the spooling of fast-moving ropes and lines. The core is of heavy rubber, containing 20% asbestos fibre, and its purpose is to lessen wear, caused by friction heat.

Incidentally, rope cable and cordage is now wrapped for shipment in asbestos felt, firmly cemented to a canvas backing. The practice eliminates "sun-rot", a form of oxidation very destructive to cordage.

A similar wrapper aids in protecting cordage against the action of salt vapors in shipments by sea.

AS A FUNGICIDE.

Seldom is asbestos considered in the nature of a fungicide. In the storage of fruits and vegetables where untold damage is caused by rot and fungi-growth, it has been found that the spores causing such damage will not collect and multiply in materials made of asbestos as they do in vegetable fibre. For this reason, asbestos lumber and liners of asbestos felt are replacing wood, cloth and boxboard interiors in modern storage plants.

In testing vegetable seeds for commercial purposes, it has been learned also that testing mats, made of asbestos cloth, give a more uniform germination of seeds than do burlap mats, formerly used.

Another worthy discovery is the use of asbestos insulation in the control of "storage sweating" of fruits and vegeables. This sweating is due to sudden fluctua-

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tions of storage temperature, and results in serious damage to the flavor of the product.

SUNDRY FIELDS.

New contributions to sundry fields include: An aluminum-asbestos paint for the protection of underground pipe. An asbestos shield for the slow tempering of bits. Plastic cements for replacing concrete in seating casing. Swabs, made of asbestos yarn, for cleaning boiler flues. Asbestos-lined funnel vats in reclaiming waste oil. Asbestos sponge filters for removing sludge in air compression work. Asbestos-resin dressing for high-speed friction belts.

The list is endless, since new introductions are being made constantly.

AN ALL ASBESTOS CORN CRIB--

Out in Iowa, one of the corn states, there is a 3200 bushel capacity Asbestos Corn Crib. It is a double crib 14 feet high to the eaves with two 8' wide cribs and a driveway 13 feet wide.

Asbestos Louvre Blades three courses high are used on the driveway side of the crib, these louvre blades being flared to eliminate the difficulty of excess moisture caused by blowing rain.

Asbestos Flexboard covers the doors and the wood trim at the eaves and gables and the same material is used as a lining to keep rats out of the crib.

Asbestos Shingles (red) are on the roof and asbestos clapboards on the gables and the granary at one corner of the building.

The asbestos materials were supplied by P. T. Nelson's Sons, Johns-Manville dealers in Boone, Ia.

—:—

Brooder houses can be made ratproof and vermin-proof by the use of asbestos-cement materials.

ASBESTOS COATINGS-

Underground Pipes Require Coatings with Special Qualities

The importance of protective coatings on pipes used underground may be realized from these figures: there are approximately 450,000 miles of underground pipe lines and 27,000,000 house services exposed to soil action, representing a combined investment of some five billion dollars, with the annual underground corrosion loss estimated at $142,000,000. Little wonder, then, that the National Bureau of Standards, in cooperation with research associates supplied by the American Petroleum Institute and the American Gas Association has been conducting a series of investigations on protective coatings, including asbestos, since 1922.

Altho conclusive data is not yet available some important facts concerning pipe coatings have recently been made available by the Bureau thru Associate K. H. Logan. In summarized form he points out that insulated coating on pipes reduces the current collected (electrolysis) and the total corrosion but tends to accelerate local pitting in areas where the pipe is anodic to the earth; that after a four year period some form of rust will set in on pipes coated with from 0.02 to 0.5 inch thicknesses; that the general effectiveness of a coating is increased by more thickening; that the chief causes of coating failures are soil stress, improper coating application, and the deterioration of one or more component parts or constituents of the coating; and that thin coatings, such as paints, cutbacks and dips do not afford adequate protection in corrosive soils.

In a series of comparative tests for different competitive coating materials, it was determined that asbestos felt was superior to rag felt or woven cotton fabric as a reinforcement for bituminous base coatings, especially in soils in which organic materials rot.

It is interesting to note that these tests have determined that the most frequent cause of underground cor-

rosion seems to be a difference of electrical potential on the metal surfaces resulting from differences in aeration, moisture, or other soil conditions. The characteristics and properties of asbestos materials are often proof against many of these conditions with the natural result that its use as a protective pipe coating for underground work is found to be increasing.

A protective coating for the type of work described herein should have one or both of two purposes, i. e., the elimination of potential differences by keeping soil and soil solutions away from the pipe, and, secondly, the increasing of the electrical resistance of the circuit either by the resistance of the coating itself or, in the case of metallic coatings, by the film which the corrosion of the coating produces. Thick bituminous coatings, in which asbestos felt plays an important role, tend to serve both of these purposes as determined by the tests being conducted.

In brief, some of the requirements of a good protective coating for underground pipe include resistance to mechanical shock, it should not flow under moderate pressures applied over long periods, it should have and maintain a relatively high electrical resistance, should deteriorate but slowly with age and exposure to soil conditions, and finally, the adhesion between the coating and the pipe should be sufficient to maintain the two in intimate contact when the coating is exposed to such shocks and strains as it is bound to encounter. Asbestos pipe insulation answers to most of these requirements.

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NATIONAL DEFENSE and ASBESTOS

Several executives of the Asbestos Industry on June 27th attended a meeting called by C. K. Leith, Consultant on Minerals, of the National Defense Commission, Washington. The meeting discussed probable needs of asbestos by the United States in its Defense program. "ASBESTOS" and the Asbestos Industry stand ready to supply statistics, information, etc., to the best of their ability, at the call of the Commission.

—:—

On July 2nd the President issued a proclamation, which became effective July 5th, shortly after signing the Sheppard-May bill (which bill grants the President authority to curtail or prohibit exports of essential products) the proclamation requiring that a government license be obtained before certain materials vital to our defense are exported. Asbestos is included in this list of materials, the definition reading:

> Asbestos, crude and semi-fabricated, if chiefly of fibers of three quarters of an inch or more in length.

Secretary of State Hull was authorized to issue licenses for any exportation of the materials named in the proclamation and was authorized to refuse licenses for any items on the list certified to him by a newly-created official known as the administrator of export control. The President appointed Lt. Col. Russell Maxwell to the position of administrator of export control.

The regulations accompanying the proclamation stated that one duplicate application for license to export must be made for each complete shipment to any one consignee, and may include more than one commodity, but may not include shipments to more than one country. Shippers must state the quantity being exported and the approximate net value.

Licenses granted are not transferable and are subject to revocation without notice. Shipments must be made from port of exit within one year from the date of issuance of the license.

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ASBESTOS IN CORE SAND

Comments on the use of a short grade of asbestos in Core Sand[1] have not been many but two which have come in are very interesting.

Curiously enough both of these men tell us that they have never heard of using asbestos for this purpose.

One of them, an Asbestos Producer, suggests that floats or a short grade like 7R would be suitable for the purpose and offers to supply small quantities of either of those grades, or of any others, for conducting experiments.

The other one comments as follows:

"While many factories use a suitable sand with no admixture (except of course water) some do add small quantities of binding materials, such as dextrin and molasses. The main consideration seems to be that the added material should not interfere with porosity of the sand. If the addition of asbestos is not objectionable on this score, and if, at the same time, it is found to give better results, then an investigation to determine the most suitable grade, optimum proportions, etc., would certainly be warranted.

"As to the market possibilities, it should be borne in mind that inasmuch as core sands are re-used many times, the actual amount of asbestos which would be used up would be relatively small. Also, the addition of asbestos may be beneficial in only certain types of castings."

Even tho the quantities used for this purpose may be small, it seems rather worthwhile to learn more about the suggestion and we urge all our subscribers to find out all they can and write us of their findings.

[1] See May 1940 "ASBESTOS", page 10.

—:—

Your estimators can save a lot of time and work by using the tables mentioned on page 29 of our January number. An easy way to figure areas of fittings, flanges, etc. Address "ASBESTOS", 16th Fl., Inquirer Bldg., Philadelphia. Price: $1.00 per set (12 tables).

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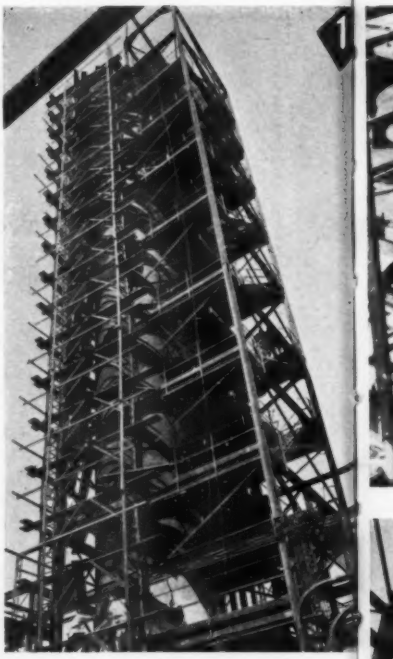
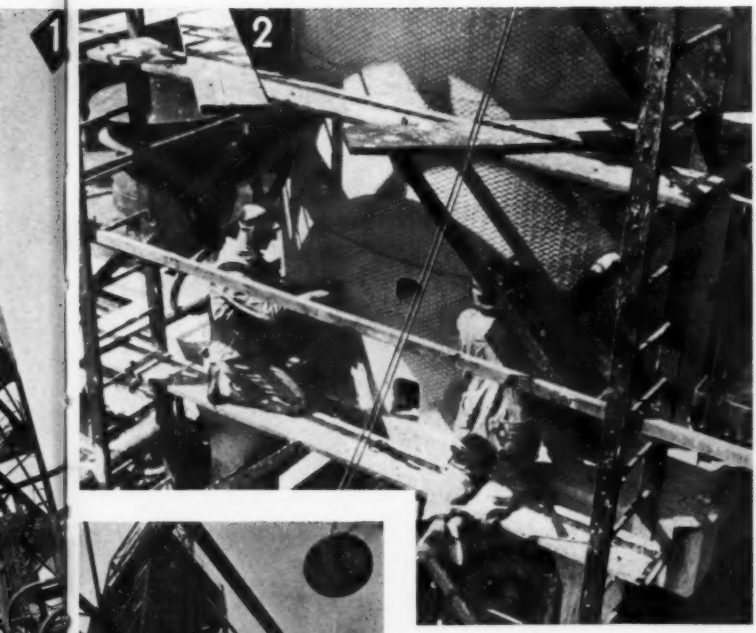
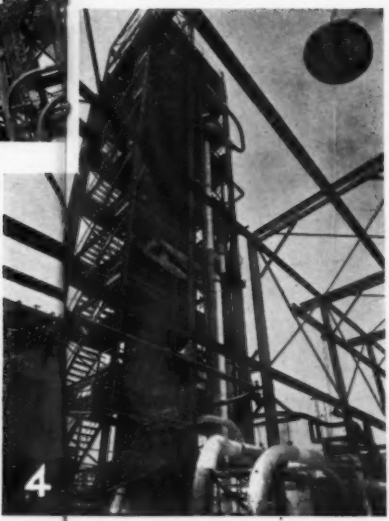
HOT and HIGH .....

is a fair description of the crude stripper tower unit shown in these views. This Ehret insulation job was recently completed by the Philadelphia Asbestos Co. at the Point Breeze plant of the Atlantic Refining Co.

The height of this tower imposed unusual working conditions and necessitated the erection of complete scaffolding. Since temperatures of the equipment ranged up to approximately 800°F. Ehret's Enduro-85% Magnesia combination insulation was used in both block and pipe covering forms.







1. General view of crude stripper tower with special scaffolding erected for applying the insulation. Tower is 125' high and 11' in diameter.

2. Applying hexagonal mesh netting over Ehret's Enduro-85% Magnesia combination block insulation on vacuum flash tower.

3. Covering expansion loop in a steam-heated oil line. Note the two pipes within the same covering.

4. Straight and curved piping on side of tower. Insulations were protected with Ehret's Weatherproofing Jackets and Fibrekote.

MARKET CONDITIONS

GENERAL BUSINESS

Things happen so quickly these days that business has difficulty in adjusting itself to the changing conditions. The war, the defense program, increasing taxes, election year with its usual uncertainties — all these factors and many others coincident with them or peculiar to the particular business you happen to be in, must be given consideration.

As the defense program gets underway, farther and farther will its influenc on business be felt.

At present the common expectation seems to be good business during the third quarter; with probable peak in August, and then a recession in the fourth quarter. It will be interesting to see whether actual facts bear out this prediction.

ASBESTOS - RAW MATERIAL

There has been no interruption of the importation of asbestos into the United States due to the war.

South Africa, Rhodesia and Cyprus have been shipping substantial tonnages into this country. Prices are unchanged.

ASBESTOS—MANUFACTURED GOODS

Textiles. The demand, for asbestos textiles, is considerably less than it was the forepart of the year, and the situation doesn't appear to have a chance for improvement for another thirty or sixty days. It can be said, however, that the volume of business at the present time is better than for the same period last year.

The price level seems to be fairly firm. There is no definite indication as to what the raw asbestos prices will be in the fourth quarter, and this has a tendency to keep the price trend fairly steady.

Paper and Millboard. Demand in these lines is fair, with prices firm.

Insulation. Low Pressure. Despite the rather large building program in the residential line, demand is light,

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ROOFING PAINTS — ASBESTOS PAPER
SHINGLES — PLASTIC-CEMENT — MILLBOARD

Samples and Prices upon application

VERMONT ASBESTOS MINES

Division of The RUBEROID Co.

HYDE PARK, VERMONT

SALES OFFICE, 500 FIFTH AVENUE, NEW YORK CITY • MINE, EDEN, VT.

principally because in the low cost speculative building field little insulation is used. Other, better built homes, will probably use insulation but apparently the lateness of the season is holding back demand. Prices are fair.

Insulation. High Pressure. Sales in this line continue to show a declining tendency which has been in evidence during the whole of 1940. Chief hope for improvement lies in the increasing activity of heavy industry which should be reflected very shortly in increased sales of high temperature insulations.

Asbestos Friction Materials. Domestic sales volume in both the automotive and industrial fields continues to hold up favorably. However in the export market there has been a decided dropping off in volume due primarily to the European situation.

Asbestos-Cement Products. Sales of asbestos shingles and sidings are running satisfactorily ahead of last year and market conditions generally are quite satisfactory. The F. H. A. small homes program is undoubtedly responsible for a large part of the increased sales of asbestos-cement sidings which are particularly adaptable to low-cost home construction, and are therefore being widely used by progressive builders in all sections of the country.

Demand for industrial products such as Corrugated and Flat Sheets is also running ahead of last year, with prospects for a still better volume during the last half of this year due to industrial expansion in connection with national defense.

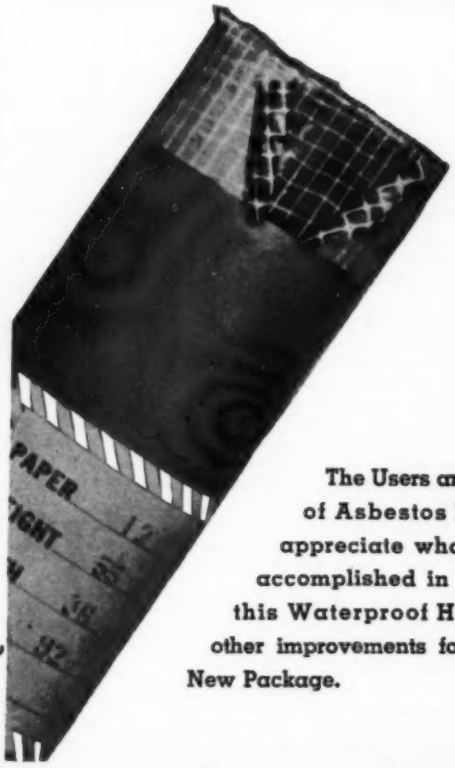
The above comments have been received from men closely in touch with the several markets. Such comments are always welcome.

—:—

The John Stuart Coleman family of New Orleans, winners of the Typical American Family Contest from Louisiana, were awarded a free trip to the New York World's Fair and a week's stay in the $2500 FHA model low-cost home in the Home Center area on the fairgrounds. The home is covered with Asbestos Siding Shingles.

During their stay at the fair they broadcast from the radio studio in the model theatre of the Johns-Manville Exhibit Building.

New HEADER



The Users and Handlers of Asbestos Paper will appreciate what we have accomplished in presenting this Waterproof Header and other improvements found in this New Package.

NORRISTOWN MAGNESIA & ASBESTOS CO.
NORRISTOWN PENNSYLVANIA

CONTRACTORS AND DISTRIBUTORS PAGE

Build Now[1]

It is the duty of everyone in the building industry to make the public understand that its surest protection against the uncertainties of the future is an investment in a home.

During the next two or three years the national defense program will provide the building industry with a great deal of business. We are all likely to be operating on a near capacity basis.

While our first duty is to cooperate in building up the nation's defenses, we must not neglect our private markets. For upon home building and commercial construction will depend our bread and butter after the defensive needs of the country have been filled.

There is a possibility that the uncertainties of war, the stock market and the presidential year may cause some prospective home buyers to freeze the capital they intended investing. As good Americans and as intelligent business men, we must not allow this to happen. The building industry today has a special obligation to itself and to the public. It is our duty to make the public understand that its surest protection against the uncertainties of the future is an investment in a home.

In urging your prospects to build now, you have many sound arguments, among which are these:—

A home is perhaps the safest investment a man can make. No matter what may happen to money, stocks and bonds, the real value of a home will persist. It will continue to provide shelter and security.

A home is a hedge against inflation. If inflation comes it means that the home which sells for $5,000 today will be worth considerably more, and it means higher salaries which will make the payments easier to meet.

Home building costs are probably lower today than they will be at any time in the near future. Most building material plants are running near capacity now. The law of supply and demand will tend to increase prices. Costs today are actually 9% below the 20 year average.

There is a strong probability of a shortage of both skilled labor and of materials. The defense program will involve large

[1] Henry W. Collins, Vice President of The Celotex Corporation, in a letter to their dealers tells why. The above is taken from Mr. Collins' letter.

scale building of industrial plants and houses for workmen. The Government will be forced to build hangars, barracks, office buildings, etc. Even now there is a shortage of building mechanics in many centers.

These are sound and strong reasons why people should build now. Discuss them with your banker, your mayor and with your local newspapers. If you can get a sentiment started in your trading area to "BUILD NOW" you will have accomplished much.

Building

Recent intensification of the European war has not yet effected any important change in the upward trend of construction in the United States, according to F. W. Dodge Corporation. The May total of construction contracts awarded in the 37 eastern states amounted to $328,914,000, largest monthly total recorded thus far in 1940, being 9 per cent over the April figure and nearly 7 per cent over the total for May of last year.

Most significant in last month's record was the contract figure for residential building, $145,912,000, largest residential total since August 1929, and 9 per cent over the residential figure for May 1939. Gains in contract volume were continuous thru the month, showing no diminution after the German invasion of the low countries.

Of possible significance for residential building in coming months are recent mortgage-insurance records of the Federal Housing Administration. During the five weeks ended June 1, the number of mortgages selected for appraisal increased 20 per cent over the corresponding five weeks of last year, and their total value increased 18 per cent; the number of mortgages accepted for insurance increased 4 per cent and their value increased 5 per cent. There has as yet been in the F.H.A. records no indication of a falling off due to the critical war situation.

Commenting on the situation, Thomas S. Holden, vice president of F. W. Dodge Corporation, in charge of statistics and research, stated:

"Three possible factors might change the current upward trend of private building:

1. Panic, causing private investors to defer or abandon building projects.

2. A rapid rise in building costs.

3. Imposition of Government controls and restrictions, in order to give priority to construction essential to the national preparedness program. No one of these three things has happened yet.

"The facts known to us up to this present date seem to indicate a continued upswing of private construction during the remainder of this year; new facts could, of course, change the picture in very short order.

NEWS OF THE INDUSTRY

BIRTHDAYS

Thomas L. Gatke, President, Gatke Corporation, Chicago, Ill., July 16.

L .W. Noland, President, Noland Co., Newport News, Va., July 17.

L. B. Page, Sales Representative for Asbestos and other Materials, Pittsburg, Pa., July 18.

J. F. D. Rohrbach, Vice President, Raybestos-Manhattan, Inc., Bridgeport, Conn., July 18.

R. S. King, President, Philip Carey Manufacturing Co., Lockland, Cincinnati, Ohio, July 21.

M. T. Rhodes, John M. Watt's Sons, Philadelphia, Pa., July 21.

C. R. Hubbard, Vice President, Garlock Packing Co., Palmyra, N. Y., July 25.

George R. Weber, General Manager, United States Asbestos Division, Manheim, Pa., July 25.

Frank C. LeRow, Vice President & Treas., Asbestos, Asphalt & Insulation Mfg. Co., Chicago, Ill., July 26.

John Ozurovich, President, Atlantic Asbestos Corporation, New York City, July 31.

S. R. Zimmerman, President, United States Asbestos Division, Manheim, Pa., August 1.

Arthur C. Sprinkmann, Vice President, Sprinkmann & Sons Corp., Milwaukee, Wis., August 3.

J. A. Whittaker, Secy-Treas., Crandall Packing Co., Palmyra, N. Y., August 6.

A. P. Keasbey, President, Robert A. Keasbey Co., New York City, N. Y., August 6.

Paul C. Collopy, President, Acme Asbestos Covering & Flooring Co., Chicago, Ill., August 8.

Grant V. Wilson, President, Grant Wilson, Inc., Chicago, Ill., August 11.

W. L. Steffens, Vice President, Philip Carey Manufacturing Co., Lockland, Cincinnati, Ohio, August 13.

Ernest Muehleck, President, Keasbey & Mattison Company, Ambler, Pa., August 15.

To all these gentlemen we extend congratulations and best wishes, on the occasion of their birthdays.

—:—

NORRISTOWN MAGNESIA & ASBESTOS CO. are distributing their Insulating Materials in most of the New England area thru Young-Jones Company, located at 195 Albany St., Cambridge, Mass., where a complete stock of material is carried and prompt delivery made from this stock.

• BLUE ASBESTOS

The Cape Asbestos Company, Ltd., is the world's largest supplier of acid-resistant blue crocidolite asbestos, and the only manufacturer operating its own mines. Inquiries solicited on:

MILLBOARD **YARNS**
ROVINGS **POWDER** **CLOTHS**
PROCESSED FIBRES
Unexcelled for use in
ASBESTOS CEMENT PIPES

• AMOSITE ASBESTOS

This fibre owing to its great length and bulk is unrivalled for use as an insulating medium in:

Asbestos mattress filler
85% Magnesia insulation

The CAPE ASBESTOS CO. Limited

Morley House, 28-30 Holborn Viaduct, London, E.C.1.
FACTORY, BARKING, ESSEX

United States Sales Agent:
ARNOLD W. KOEHLER
415 LEXINGTON AVE. **NEW YORK CITY**
TELEPHONE—VANDERBILT 6-1477

L. M. CASSIDY AND L. C. HART--
Elected Vice Presidents of J-M

Election of L. M. Cassidy and L. C. Hart as vice presidents was announced Monday, June 17, by L. R. Hoff, president of Johns-Manville Sales Corporation.

Mr. Cassidy was at the same time appointed general manager of the building materials department and a member of the Officers Board. Mr. Hart, in addition to his new duties, will continue as general sales manager of the building materials department. These changes have been made to fill the vacancy caused by the recent death of P. A. Andrews, vice president in charge of the building materials department.

Mr. Cassidy graduated from the Wharton School of Finance and Commerce of the University of Pennsylvania in 1926, and immediately thereafter began his career with Johns-Manville as a salesman in metropolitan New Jersey. In 1932 he became manager of the Newark Office and in 1933 was transferred to New York headquarters as assistant to the vice president in charge of building materials. Three years later he became general merchandise manager. He is a member of the Canoe Brook Country Club and a director of the National Rock and Slag Wool Association.

L. M. Cassidy *L. C. Hart*

Mr. Hart joined Johns-Manville as an acoustical engineer in New York City after receiving his engineering degree from Massachusetts Institute of Technology in 1913. After holding several posts with the company in its Western Division, he became in 1933 assistant sales manager and in 1935 general sales manager of the building materials department. He is a member of the Engineers Club of New York and the University Club of Chicago, and also a member of the Johns-Manville Quarter Century Club.

Mr. Hart is well-known to lumber dealers thruout the country thru his many addresses on the subject of merchandising and its application to the problems of the building industry Both Mr. Hart and Mr. Cassidy have been active in the Johns-Manville sponsored National Housing Guild Schools.

VISUALIZING YOUR NEW ROOF

Thru a novel process developed by the Keasbey & Mattison Company of Ambler, home owners can now be shown just how various combinations of the soft-toned asbestos-cement shingles will look on the homes they are planning, and the best combination to use with the color scheme being planned.

The process is known as Color-Tone and comprises a kit (substantially made binder) containing color swatches, visualization sheets and a 4-page instruction folder showing how to use them. There are nine pages of color swatches (80 swatches of a given color on each page) scored for easy removal. The nine colors are replicas of the colors in the "Century" No. 92 line, which lend themselves particularly to pleasing and effective blending combinations. By detaching the swatches and setting them up on the visualizing sheets virtually any combination of color design or blend may be worked out, resulting in practically a perfect preview of the roof.

Architects and color experts who have worked with the Color-Tone process say that it is very helpful in the solution of the color roofing problems and in arriving at desired effects in an inexpensive way.

After the roof design has been accepted, the visualization sheet is given to the roofer to serve as a guide during the application of the shingles.

Another sales help, this one particularly designed for builders, is called the Blend Roller. This is a circular card with a cutout of an attractive cottage superimposed. By rotating the upper cutout card, five different color combinations of shingles are in turn displayed on the cottage roof. The Keasbey & Mattison Company believes that the Blend Roller will be a welcome help to dealers in selling home owners for renovizing jobs.

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"SALES TOOLS", an article appearing in the June issue of "American Roofer" (published at 425 4th Ave., New York City) will interest any salesman or sales manager, even tho it specifically refers to sales of roofing.

"CATCH UP WITH YOUR SIDING", appearing in the June 1940 issue of the American Roofer, and written by John A. Partin, will be of interest to our friends in the Asbestos-Cement Products end of the Asbestos Industry.

WILLIAM SWANSON, Personnel Manager of The Flintkote Company, recently addressed the 15th Annual Summer Conference of the Industrial Conference Association of New Jersey, on the subject "Is Job Evaluation Necessary". In his remarks Mr. Swanson pointed out the factors which increased the value of a job — hazards, skill, responsibility, education needed, etc.

'STA-DRY" HEADER---Norristown Improves on Packing of Asbestos Paper

Rolls of Asbestos Paper may stand in a distributor's or jobber's warehouse for several months before being used, and have that many or more chances of being damaged in various ways.

One cause of frequent damage is moisture—moisture caused by damp floors, sudden showers or rainy days when rain beats in.

Recently the Norristown Magnesia & Asbestos Company of Norristown, Pa., decided to so wrap its rolls of asbestos paper that damage is kept at a very low minimum. First it adopted a tougher, better looking wrapper of dark blue, which will take much more abuse in handling, without tearing or coming loose. This is quite an improvement over its previous wrapper.

But even better is the new header the company has adopted —it is of tar-lined, jute reinforced, kraft waterproof paper to protect the ends of the paper rolls. The trade name "Sta-Dry" was adopted and the name means just what it says—when this Header is used the ends of the rolls *stay dry* under almost any moist condition. Note the illustration on page 25.

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JOHNS-MANVILLE. P. E. Redding was recently appointed Eastern Division Sales Manager of the Transportation Department of Johns-Manville. He joined the company in 1920 as an engineer. In 1923 he was transferred to the Central Division as a sales engineer of the Transportation Department, and later was moved to the Eastern Division in the same capacity. Last year he was promoted to the position of Staff Engineer at General Headquarters which position he held until his present promotion.

Elliot Fairback, who was promoted to Staff Engineer, succeeding Mr. Redding, has been with the company since 1929. He was previously located in St. Louis as Sales Engineer for the Transportation Department, and prior to that he had been assigned to the Sales Department in both Chicago and St. Louis, and in New York as an assistant engineer.

Johns-Manville factory at Waukegan, Ill., was recently host to a group of 35 Milwaukee and Wisconsin architects and members of the Producers Council. The group spent the day inspecting the J-M plant.

The 1940 edition of the Johns-Manville "Home Idea Book" is completely revised and in fresh and vivid colors. The book has been designed as a sales help to building material dealers to stimulate the new home and home improvement and contains vigorous and original ideas for home construction and decoration.

CAPE ASBESTOS COMPANY held its forty-seventh ordinary general meeting on June 27, 1940, at which time the Directors presented the annual report for the year ending December 31, 1939. The net profit, before deduction of the amount reserved (£55,000) for Excess Profits Tax, National Defence Contribution and Income Tax, amounted to £112,307, as compared with the previous year's total of £101,351. A copy of the balance sheet follows:

ASSETS	£	s	d
Cash on Deposit and Current Accts. and Cash in hand	90,426	3	0
Bills Receivable	16,203	9	9
Sundry Debtors less Reserves	161,243	14	5
Amts. due by Sub. Companies	11,583	13	4
Stock of Crude and Mfd. Asb. Goods and Sundry Stores in Gt. Britain, S. Africa, in transit and with Agents abroad, less Reserve	168,579	6	5
Investments in other Companies, at cost less amts. written off	10,240	9	2
Holdings in Sub. Companies, less amts. written off	55,688	11	2
Freehold Land and Factories in England at cost, less depr.	69,161	12	8
Freehold Land and Factory in Italy at cost, less depr.	20,768	17	8
Asbestos Estates in S. Africa at cost less depr.	68,602	13	1
Machinery, Plant, etc. at cost, less depr.	43,334	11	10
	£715,833	2	6
LIABILITIES			
Capital Account—			
Authorized 150,000 Ord. Shares at £1 ea. 150,000 Cum. 5% Part. Pref. £1 ea.			
Less Issued 128,000 Ord. Shares of £1 ea. 128,000 Cum. 5% Part. Pref. £1 ea.	256,000	0	0
General Reserve—per last account	128,000	0	0
Contingencies Reserve as per last acct.	50,000	0	0
Appropriation from 1939 Profit	10,000	0	0
Employees' Benefit and Compensation Fund	6,955	2	9
Sundry Creditors	57,563	4	5
Provision for Taxation	87,779	19	8
Amt. due to a Sub. Company	53,180	16	7
Purchase consideration payable on property in S. Africa	1,140	4	0
Liability under Staff Pension Scheme	2,006	10	0
Dividends paid 2nd Jan., 1940 and Final Div. proposed	44,800	0	0
Unappropriated Balance	18,407	5	1
	£715,833	2	6

In October 1939 additional freehold premises were acquired in the North of England in order to meet specific and urgent Government requirements. This factory was in production at the end of the year.

A final Dividend of 11% on both the ordinary and participating preference shares was declared, making total dividends for the year of 15% on the ordinary and 20% on the preference stock. This compares with 17½% on the ordinary and 22½% on the preference shares for 1938.

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RAW ASBESTOS DISTRIBUTORS LIMITED advise that their address is now (from June 17th on), Spotland, Rochdale, Lancs., England. Telegrams should be addressed to Vulbeston, Rochdale. Their telephone number is Rochdale 4221.

JOHNS-MANVILLE recently furnished 100 one-foot sections of asbestos-cement pipe for the protection of records in Oglethorpe University's Crypt of Civilization, the University scientists

hoping that these records will be dug up some 6000 years or 18,000 generations hence. Asbestos cement was used to seal the ends of the sections after the documents had been enclosed. Since asbestos-cement pipe is highly resistant to corrosion and disintegration, there seems a good chance that the pipe will remain intact, barring any violent changes in the earth's surface during these centuries. Further information concerning the Crypt of Civilization will be found in November 1938 "ASBESTOS", page 18.

GILES E. HOPKINS, on May 1st, was appointed technical director of the U. S. Asbestos Division, Raybestos-Manhattan, Inc., his headquarters being at Manheim, Pa.

Mr. Hopkins was previously with the United Shoe Machinery Corporation of Boston, Mass., and at one time served as chemical engineer and technical director of the Bigelow-Sanford Carpet Company, holding the latter position for eleven years.

"ASBESTOS — SILK OF THE MINERAL KINGDOM" by Dr. Oliver Bowles of the U. S. Bureau of Mines appears in serial form in three issues, April, May and June of the United Roofer. The article was given as a lecture by Dr. Bowles last November at the University of Maryland.

PATENTS

This information obtained from the Official Patent Gazette, published weekly by the U. S. Patent Office, Washington, D. C.

Pipes of Cementitious Material. No. 2,200,267. Granted on May 14, 1940 to John Ferla, Chicago, Ill., Assignor to Levi H. Blouch, Merchantville, N. J. Application June 6, 1938. Serial No. 212,071.

Apparatus for forming cementitious tubes including a mandrel, a plurality of calender rollers, cooperating with said mandrel, means for uniformly rotating said mandrel and said roller means for feeding dry material to said mandrel and said rollers and means for simultaneously moistening the material on said rollers to superpose moist coatings on the dry coating of the mandrel.

Manufacturing Pipes from Cementitious Composition. No. 2,200,268. Granted on May 14, 1940 to John Ferla, Chicago, Ill. Assignor to Levi H. Blouch, Merchantville, N. J. Application September 22, 1938. Serial No. 231,096.

In an apparatus for producing pipe from a cementitious composition, a vat containing liquid composition a molding screen partially submerged in said liquid composition and rotatably mounted in said vat, a runway upon said screen extending tranversely thereto, a mandrel adapted to roll in said runway and means for arresting said mandrel in position to receive a layer of composition from said screen, said runway being at a height above said screen to permit co-operation between said mandrel and said screen.

THIS and THAT

The new cover adopted for the coming year and used the first time this month, strikes a somewhat new note.

The photograph gives a general view of the mills at the new Havelock Mine in Swaziland (Africa) and shows the ropeway connecting the Mine with the main line at Barberton Station.

This mine, under development by New Amianthus Mines, Ltd., a subsidiary of Turner-Newall, Ltd., for some years, began production about a year ago. It employs about 90 Europeans and 2400 natives, all of whom have living quarters provided for them near the mine. Under the able direction of Roland Starkey, M.I.M.M., Director in Africa for Turner-Newall, Ltd., and Consulting Engineer for the Company's African Mining interests, the Havelock Mine promises to be one of the greatest in Africa. For further description see page 8 of our June 1939 number.

We plan to publish other photographs of the mine in later issues of "ASBESTOS".

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A Trade Association Directory is being prepared by the Trade Association Section of the Bureau of Foreign and Domestic Commerce and will be available for distribution within a few months at a cost of 25 cents per copy. Further announcement of this will be made by us when the Directory is ready.

—:—

Edward Smithwick, truck driver of Detroit, Mich., was recently named Champion Safe Driver of the United States in interstate transportation. He has driven 1,222,000 miles without an accident.

—:—

Building permits issued in 202 municipalities in Canada during the month of April had a value of $9,916,639.

—:—

This issue begins our *twenty-second* year.

Africa (S. Rhodesia)

(Statistics by Rhodesia Chamber of Mines)

	March 1940 Tons (2000 lbs.)	Value £	s	d
Bulawayo District				
Shabanie (Rho. & Gen. Asb. Corp. Ltd.)	3,424.36	69,399	12	8
Nil Desperandum (African Asb. Mng. Co., Ltd.)	605.64	8,420	3	1
Victoria District				
D. S. O. (Mashaba Rho. Asb. Co., Ltd.)	1.50	6	8	3
Gath's & King (Rho. & Gen. Asb. Corp., Ltd.)	722.33	13,873	18	3
Murie Asbestos (Mashaba Rho. Asb. Co., Ltd.)	12.00	218	17	9
Regina (African Asb. Mng. Co., Ltd.)	78.00	1,211	12	0
	4,843.83	£93,130	12	0
March 1939	*4,844.03*	*£87,881*	*11*	*3*

Africa (Swaziland)

April 1940 (Chrysotile) ..... 2000.08 Tons (2000 lbs.)

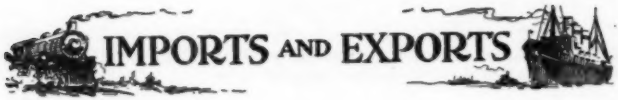
Africa (Union of South)

(Statistics by Dept. of Mines & Industries of U. of S. A.)

	March 1939 Tons (2000 lbs.)	March 1940 Tons (2000 lbs.)
Transvaal		
Amosite	980	1,236
Blue	335	417
Chrysotile	88	24
Cape		
Blue	532	491
	1,935	2,168

Canada

Production May 1940 27,386
Production May 1939 29,414



Imports into U. S. A.

(Figures published by U. S. Dept. of Commerce)

Unmanufactured Asbestos:

	April 1939 Tons (2240 lbs.)	April 1940 Tons (2240 lbs.)
Africa (Br. S.)	939	1,255
Australia	1	3
Canada	11,718	13,581
Cyprus	1	.....
Finland	1	.....
Italy	2	667
United Kingdom	30	.....
	12,692	15,506
Value	*$592,402*	*$728,677*

Tabulation by Grades:

Crude (Br. S. Africa)	939	1,255
Crude (Australia)	1	3
Crude (Canada)	120	129
Crude (Italy)	2	1
Crude (United Kingdom)	30	.....
Milled Fibre (Canada)	3,924	4,283
Lower Grades (Canada)	7,674	9,169
Lower Grades (Cyprus)	1	.....
Lower Grades (Finland)	1	.....
Lower Grades (Italy)	.....	666
	12,692	15,506

Manufactured Asbestos Goods:

	April 1939 Pounds	April 1940 Pounds
Belgium (Shingles)	149,184	.....
Germany (Packing)	1,271	.....
United Kingdom (Yarn)	.....	3,863
United Kingdom (Packing)	1,485	3,665
United Kingdom (W. Fabrics)	.....	2,101
	151,940	9,629
Value	*$ 3,371*	*$6,982*

Exports from U. S. A.

(Figures by U. S. Dept. of Commerce)

Exports of Unmanufactured Asbestos for the month of April 1940 amounted to 265 tons, valued at $34,931; in April 1939, 288 tons, valued at $27,191 were exported.

Exports of Manufactured Asbestos Goods:

	April 1939		April 1940	
	Quantity	Value	Quantity	Value
Paper, Mlbd., Rlbd. ....lbs.	42,226	$ 4,624	164,874	$17,439
Pipe Covg. & Cement ....lbs.	346,103	18,927	201,086	8,768
Textiles & Yarn .....lbs.	6,634	2,445	66,009	17,961
Packing .....lbs.	105,569	64,692	116,675	62,112
Brake Lining—				
Molded & S-Molded	.....	51,548	.....	51,371
Not molded .....lin. ft.	70,604	12,504	60,643	13,744
Clutch Facings—				
Molded & S-Molded units	15,814	5,706	11,140	5,935
Woven .....units	9,941	3,490	14,890	5,267
Magnesia & Mfrs. of ....lbs.	529,436	101,446	277,955	19,486
Asbestos Roofing .....sqs.	2,384	14,776	1,684	10,392
Other Manufactures ....lbs.	276,939	28,060	433,237	40,211

Exports of Raw Asbestos from Canada

(Figures by Dominion Bureau of Statistics)

	April 1939		April 1940	
	Tons (2000 lbs.)	Value	Tons (2000 lbs.)	Value
United Kingdom	15	$ 638	1,539	$ 109,178
United States	3,968	258,496	5,363	389,444
Australia	520	31,082	1,048	75,418
Belgium	.....	.....	701	50,608
Eire	28	1,316	.....	.....
France	40	1,455	1,710	132,889
Germany	33	4,180	.....	.....
Italy	766	51,033	827	60,723
Japan	2,779	160,354	2,787	230,471
New Zealand	80	4,920	150	9,900
Poland	295	22,700	.....	.....
Portugal	33	1,238	210	13,794
	8,557	$537,412	14,335	$1,072,425

Exports of Raw Asbestos from Canada (Contd)

	April 1939		April 1940	
	Tons (2000 lbs.)	Value	Tons (2000 lbs.)	Value
Sand and Waste				
United Kingdom	150	3,180	100	2,360
United States	7,216	127,693	10,199	200,150
Australia	20	480	.....	.....
Belgium	.....	.....	.....	.....
Br. S. Africa	.....	9	.....	.....
France	30	720	.....	.....
Germany	11	143	.....	.....
Italy	.....	.....	.....	.....
Japan	11	264	.....	.....
Netherlands	30	297	.....	.....
New Zealand	.....	.....	.....	.....
Portugal	33	792	.....	.....
	7,501	$133,578	10,299	$ 202,510
Grand Total	*16,058*	*$670,990*	*24,634*	*$1,274,935*

Exports of Raw Asbestos from South Africa

	February 1939		February 1940	
	Tons (2000 lbs.)	Value	Tons (2000 lbs.)	Value
Australia	30	£ 352	20¼	£ 372
Belgium	7	120	.....	.....
France	120	2,739	95¼	2,231
Germany	22	877	.....	.....
Italy	42	833	31⅓	785
Japan	20	300	167⅓	3,749
Portugal	25	652	19¾	537
United Kingdom	405	9,710	862½	21,348
United States	532	12,106	569¼	12,458
	1,203	£27,689	1,765½	£41,480

AUTOMOBILE PRODUCTION

Automobile production for May 1940 totalled 412,492 motor vehicles (391,215 in the United States and 21,277 in Canada).

In May 1939 the total was 313,248 (297,542 in the United States and 15,706 in Canada); while 452,433 motor vehicles were produced in April 1940.

The total for the first five months of 1940 was 2,176,874 (2,083,892 in the United States and 92,982 in Canada); during the same period last year 1,731,495 were produced.

CURRENT RANGE OF PRICE

Canadian

	Per Ton (2000 lbs.) f.o.b. Mine (In U.S. Funds)
Group No. 1 (Crude No. 1)	$700.00 to $750.00
Group No. 2 (Crude No. 2; Crude Run-of-Mine and Sundry)	150.00 to 350.00
Group No. 3 (Spinning or Textile Fibre)	110.00 to 200.00
Group No. 4 (Shingle Fibre)	57.00 to 85.50
Group No. 5 (Paper Fibre)	40.00 to 49.50
Group No. 6 (Waste, Stucco or Plaster)	30.00 to 32.00
Group No. 7 (Refuse or Shorts)	13.00 to 28.00

Vermont—	Per Ton (2000 lbs.) f. o. b. Hyde Park, Vt.
"Shingle" Fibre	$57.00 to $60.00
Paper Stock Fibres	40.00 to 48.00
Waste	30.00
Shorts	13.00 to 26.00
Floats	18.00

Note: Crude Run-of-Mine (Canadian) refers to a crude asbestos produced in certain mines where Crude Fibre is not graded into regular No. 1 and 2 Crude. Crude Sundry refers to certain odd lots of off grade material which do not conform to the regular standards of No. 1 Crude or No. 2 Crude.

ASBESTOS STOCK QUOTATIONS

(These figures are compiled from the Commercial and Financial Chronicle. No guarantee made as to their correctness.)

	Par	June 1940 Low	High	Last
Armstrong Cork Co. (Com.)	np	23⅝	31¾	30½
Asbestos Corp. (Com.)	np	15¼	18	16
Celotex (Com.)	np	5⅛	6⅜	6⅜
Celotex (Pdf.)	100	40	52	50
Certainteed (Com.)	1	3⅝	4½	4¼
Certainteed (Pfd.)	100	16	21	20¾
Flintkote (Com.)	np	10⅝	13¾	13¾
Johns-Manville (Com.)	np	44	56½	56½
Johns-Manville (Pfd.)	100	123	127½	127½
Raybestos-Manhattan (Com.)	np	15½	18¾	16
Ruberoid (Com.)	np	12⅜	14¼	14¼
Thermoid (Com.)	1	3	3⅞	3⅜
Thermoid (Pfd.)	10	20	28¾	27
U. S. Gypsum (Com.)	20	50	59	54¼
U. S. Gypsum (Pfd.)	100	165	175	175

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VALLEY FORGE • PENNSYLVANIA

DO YOU KNOW–

That Canadian Johns-Manville Co. at Asbestos, Quebec, maintains 25 miles of privately owned railroad track, with 14 electric and steam locomotives; twelve miles of this track are located in the large open pit mine. The railway is used to transport the rock from the mine to the mills, to carry the overburden, waste rock and tailings to a dump and to haul cars of fibre 4 miles from the mills to connect with the Canadian National Railway system.

That the first tin moulds made for the manufacture of 85% Magnesia provided for coverings only two feet in length . . . .

That the Philip Carey Manufacturing Company gave employment to an average of 2670 people during 1939 . . . .

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(Send us interesting facts for this page concerning your company).